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REMARKS

Applicant has amended claims 1 and 17. Care has been taken to avoid adding new matter. Claims 1, 2, 8-12, 17-19, 21-24 and 27-29 are presently pending in the application.

The current amendments to claims 1 and 17 are taken from originally presented and searched claims 7 and 19, respectively. Accordingly, Applicant asserts that no new issues are presented by the addition of the "patterned" limitation to claims 1 and 17. Additionally, Applicant respectfully submits that no additional search is required as a consequence of the current amendment, since claims 7 and 19 were already searched. Moreover, this "patterned" limitation is present in claims 27 and 28, both of which already have been examined and searched.

Regarding claims 1 and 17, as amended, Applicant's Detailed Description discloses the initial provision of a substrate with "a material layer 12 formed thereon, and a photoresist layer 14, such as a patterned photoresist layer, formed on the material layer 12" (emphasis added). Next, described is "an exposure process being performed on the patterned photoresist layer 14" (emphasis added) as shown in FIG. 2, which process "alters or converts at least one property of the patterned photoresist layer 14 so that, for example, portions of the patterned photoresist layer 14 can change from a cross-linked polymer state to a less cross-linked polymer state" (emphasis added). Applicant's Detailed Description continues, adding that the "flood exposure of the patterned photoresist layer 14 [can be] followed by a heat treatment step" (emphasis added) that, "comprises a silylation of the patterned photoresist layer 14, comprising a diffusion process...."

Rejections Under 35 U.S.C. § 102

Claims 17, 18 and 21-24 are now rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Tseng (U.S. Patent No. 6,429,123), and claims 1 and 17 are rejected under 35 U.S.C. 102(e) as allegedly being anticipated by Rottstegge et al. (U.S. Patent Publication No. 2003/0091936). Applicant respectfully traverses these rejections, as set forth below.

Independent claims 1 and 17 have been amended as set forth above. Applicant respectfully traverses the Office Action's rejections as they relate to the claims even before the present amendment but especially after this amendment.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." (Emphasis added; Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)). Thus, for a rejection under 35 U.S.C. 102 to be proper, every limitation recited in a claim, which is rejected as being anticipated by a prior-art reference, must be clearly disclosed in that single prior-art reference.

In the instant case, Applicant respectfully submits that neither cited reference discloses each and every element that is recited in the rejected claims as amended, and, therefore, the cited references do not anticipate the claims under 35 U.S.C. § 102. More particularly, applying the above standard, neither Tseng nor Rottstegge et al. discloses a method for forming a semiconductor device, the method including, among other things, "providing a substrate; forming a material layer over the substrate; forming a patterned photoresist layer over the material layer; exposing a top surface of the patterned photoresist layer to a treatment radiation to generate separate photoresist structures having first distances between corresponding points of the separate photoresist structures defining a first pitch; forming a protectant layer over the separate photoresist structures of the photoresist layer; removing a portion of the protectant layer to expose an underlying portion of the photoresist layer; removing the photoresist layer to form at least part of the protectant layer into separate protectant structures having second distances between corresponding points of the separate protectant structures defining a second pitch, the second pitch being less than the first pitch; and removing portions of the material layer using the separate protectant structures as a mask" (emphasis added), as recited in independent, amended claim 1.

Nor does Tseng or Rottstegge et al. disclose a method as set forth in independent, amended

claim 17, including, among other things, "providing a substrate having a first layer formed thereon; forming a patterned second layer on the first layer; performing a treatment on the patterned second layer to form at least part of the second layer into separate structures having first distances between corresponding points of the separate structures defining a first pitch, and forming a protection layer over the second layer; removing a first portion of the protection layer to expose the second layer; removing the second layer to form at least part of the protection layer into separate protection structures having second distances between corresponding points of the separate protection structures defining a second pitch less than the first pitch; and using the separate protection structures as an etch mask, removing an exposed portion of the first layer" (emphasis added).

Thus, claims 1 and 17, and the claims dependent therefrom, are not anticipated by the prior art of record. under 35 U.S.C. § 102. Applicant respectfully requests that the Examiner reconsider and withdraw the rejections based upon 35 U.S.C. § 102.

Rejections Under 35 U.S.C. § 103

The Examiner further rejected claims 2, 8-11, 18, 21-24 and 29 under 35 U.S.C. 103(a) as allegedly being unpatentable over Rottstegge et al. in view of Liao (U.S. Patent No. 6,294,314), and rejected claims 12 and 19 under 35 U.S.C. 103(a) as allegedly being unpatentable over Rottstegge et al. in view of Liao and further in view of Mimura et al. (U.S. Patent No. 6,751,170). Applicant respectfully traverses these rejections.

Regarding the subject rejections imposed under 35 U.S.C. § 103, it is well established that a claim can be rejected on obviousness grounds only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior-art reference or combination of prior-art references. Thus, for a rejection under 35 U.S.C. 103 to be proper, every limitation recited in a claim, which is rejected as being obvious in view of a combination of prior-art references, must be disclosed or taught in that collection of prior-art references. In the instant case, Applicant respectfully submits that the cited references neither disclose nor suggest each and

every element that is recited in the rejected claims. Accordingly, the outstanding rejections under 35 U.S.C. § 103 are improper and should be withdrawn.

It is submitted that the presently pending dependent claims are allowable at least because of their dependencies upon independent, amended claims 1 and 17, and further because of the additional limitations recited in those dependent claims.

In view of the above, Applicant submits that the application is now in condition for allowance, and an early indication of same is requested. The Examiner is invited to contact the undersigned with any questions

Respectfully submitted,

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